

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-45 (canceled).

Claim 46 (new): A method of producing a genomic library enriched for genes and regulatory sequences from a eukaryotic genome, said method comprising:

cleaving a eukaryotic genome into fragments of double stranded DNA;
denaturing the double stranded DNA fragments;
selectively hybridizing the fragments at Cot values of between approximately 0.01 and 100 to yield a population of double-stranded, repetitive DNA fragments and a single-stranded population of non-repetitive fragments enriched for genes;
separating the two populations by hydroxyapatite chromatography;
selecting the non-repetitive population enriched for genes; and,
inserting the non-repetitive population of fragments into a vector to produce a genomic library enriched for genes and regulatory sequences from a eukaryotic genome.

Claim 47 (new): A method of claim 46 that further comprises the step of sequencing the fragments enriched for genes.

Claim 48 (new): The method of claim 46 wherein the step of cleaving comprises randomly shearing the genomic DNA to yield fragments.

Claim 49 (new): The method of claim 46 wherein the step of cleaving is by methylation insensitive restriction enzymes.

Claim 50 (new): The method of claim 46 further comprising the step of size fractionating said genomic DNA fragments before inserting the fragments into a vector.

Claim 51 (new): The method of claim 50 wherein the fractionated DNA fragments range from about 0.5 to about 4 kilobase pairs.

Claim 52 (new): The method of claim 46 wherein the vector is selected from a group consisting of phage and plasmid.

Claim 53 (new): The method of claim 52 wherein the phage vector is M13.

Claim 54 (new): The method of claim 46 wherein said genome is a plant genome.

Claim 55 (new): The method of claim 54 wherein said plant genome is selected from the group consisting of: maize, rice, Brassica, soybean, and wheat.

Claim 56 (new): The method of claim 46 wherein said genome is a cereal genome.

Claim 57 (new): The method of claim 46 wherein said genome is mammalian.